

CLAIMS

What is claimed is:

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 1 1. A process chamber airflow system, comprising:
 2 a blower suitable for creating an initial flow of air suitable for circulation in a process
 3 chamber;
 4 a plenum capable of receiving the initial flow of air; wherein the plenum is connected to
 5 the blower and the process chamber; and
 6 an air diffuser, connected to the plenum, wherein the air diffuser contains a plurality of
 7 holes, such that the initial flow of air through the plenum is reduced.
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 1 2. The process chamber airflow system of claim 1, wherein the air diffuser further
 2 comprises:
 3 a means for securing the air diffuser to the plenum.
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 1 3. The process chamber airflow system of claim 1, wherein the reduction in airflow
 2 is sufficient to cause the initial airflow to be distributed uniformly through the plurality of
 3 holes in the air diffuser.
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 1 4. The process chamber airflow system as claimed in claim 3, wherein the air
 2 diffuser is capable of eliminating initial airflow turbulence entering the plenum from an
 3 air filter.
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 1 5. The process chamber airflow system of claim 1, further comprising a filter
 2 disposed between the blower and the plenum.
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 1 6. The process chamber airflow system as claimed in claim 5, wherein an individual
 2 hole, included in the plurality of holes, cross-sectional area varies.

7. The process chamber airflow system of claim 1, wherein the air diffuser is capable of dissipating static charges.

8. The process chamber airflow system of claim 1, wherein the air diffuser's plurality of holes are uniformly distributed throughout the air diffuser.

9. The process chamber airflow system of claim 1, wherein the air diffuser is capable of being disposed on one side of a generally cubic chamber of a semiconductor production device.

10. The process chamber airflow system of claim 1, wherein the chamber is suitable for utilization in microchip production.

11. The process chamber airflow system of claim 1, wherein the air diffuser is capable of diffusing air such that contaminate particles are not entrained in the chamber airflow.

12. The process chamber airflow system of claim 1, wherein the plurality of holes range in size from 0.125 inches to 0.5 inches.

13. An air diffuser for utilization in a process chamber, comprising
 a means for securing the air diffuser to the process chamber; and
 a plate with a first side and a second side, connected to the securing means, wherein the plate includes a plurality of holes penetrating the first and the second sides; wherein the plurality of holes are uniformly dispersed throughout the plate; wherein the plurality of holes are sufficient to cause the first side of plate to experience a first pressure and the second side to experience a pressure lower than the first pressure when the plate is disposed in an airflow.

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1 14. The air diffuser of claim 13, wherein the plurality of holes has a total cross-
2 sectional area lower then that of an inlet supplying the airflow.

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1 15. The air diffuser of claim 13, wherein the change in pressure between the first and
2 the second sides of the plate is sufficient to distribute the airflow through the entire
3 plurality of holes.

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1 16. The process chamber airflow system of claim 13, further comprising a filter
2 disposed between the blower and the plenum.

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1 17. The process chamber airflow system as claimed in claim 13 wherein an individual
2 hole, included in the plurality of holes, cross-sectional area varies.

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1 18. The air diffuser of claim 13, wherein the plate is capable of dissipating static
2 charges.

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1 19. The air diffuser of claim 13, wherein the air diffuser is capable of diffusing air
2 with a substantially laminar flow.

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1 20. The air diffuser of claim 13, wherein the plurality of holes range in size from
2 0.125 inches to 0.5 inches.

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1 21. A method of providing substantially laminar airflow in a process chamber,
2 comprising:

3 generating an initial flow of air with an initial cross-sectional area;

4 disposing an air diffuser with a plurality of uniformly spaced hole in the airflow;

5 wherein a total cross-sectional area of the plurality of holes is less then the initial cross-

6 sectional area;

- 7 creating a back-pressure of air due to the reduction in the cross-sectional area through the
8 plurality of holes;
9 dispersing a portion of the initial airflow uniformly across the air diffuser;
10 providing uniform airflow through the plurality of holes included in the air diffuser, to the
11 process chamber.

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